REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-28 are pending in this application. Claims 1-2, 5-7, 9-10 and 12-14 are amended. Support for the changes to the claims is found in the originally filed disclosure, including the original claims including Claims 5-6, the specification at least from page 28, line 27 to page 29, line 10, and the drawings at least in Figs. 10 and 16(a). No new matter is added.

In the outstanding Office Action, Claims 7-10, 12-14 and 17-28 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. 2004/0023658 (Karabinis) in view of U.S. 5,805,633 (Uddenfeldt); and Claims 1-6, 11, 15 and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Karabinis in view of Uddenfeldt and U.S. 5,974,324 (Henson).

As currently amended, Claim 1 recites:

> A frequency channel assignment system comprising a plurality of radio communications systems which use a common frequency band in a common geographical area, and a controller, the controller comprising:
>
> a system characteristics information management function configured to manage system characteristics information showing characteristics of frequency channels in the radio communications systems, ***the system characteristics information including, for each frequency channel, an allowable amount of interference on the frequency channel***;
>
> a frequency channel assignment function configured to assign the frequency channels to each of the radio communications systems, based on the system characteristics information and channel status information showing status of the frequency channels, so as to avoid inter-system interference, ***the channel status information including, for each frequency channel, an interference measurement of the frequency channel***;
>
> the controller determining, within a range of the common frequency band and based on the system characteristics information and the channel status information:
>
> a first occupied use frequency band which includes first frequency channels available only to a first radio communications system,
>
> a second occupied use frequency band which includes second frequency channels available only to a second radio communications system, and
>
> an overlapping use frequency band which includes third frequency channels available to the first and second radio communications system; and

> ***the frequency channel assignment function, when the first occupied use frequency band is lower than the second occupied use frequency band, prioritizes a frequency channel of a low frequency band in the first radio communication system and prioritizes a frequency channel of a high frequency band in the second radio communication system.***
> [Emphasis added].

As previously presented, Claim 1 defines a frequency channel assignment system which includes a controller. The controller determines, within a range of a common frequency band and based on system characteristics information and channel status information, first and second occupied use frequency bands and an overlapping use frequency band. The first frequency band includes first frequency channels available only to a first radio communications system, whereas the second frequency band includes second frequency channels available only to a second radio communications system. The overlapping use frequency band includes third frequency channels available to both the first and second radio communications systems.

As amended herewith, Claim 1 further incorporates subject matter of previously presented Claims 5 and 6 and the feature of, when the first occupied use frequency band is lower than the second occupied use frequency band, prioritizing a frequency channel of a low frequency band in the first radio communication system and prioritizing a frequency channel of a high frequency band in the second radio communication system. Although varying in scope and/or directed to different statutory classes, the other independent claims are amended to incorporate subject matter corresponding to the amendment made to Claim 1, and consequently, the arguments below are submitted to apply to the other independent claims and the rejection(s) thereof.

As emphasized above, Claim 1 further defines the system characteristics information as including, for each frequency channel, an allowable amount of interference on the frequency channel, and the channel status information as including, for each frequency channel, an interference measurement of the frequency channel.

Figure 10 illustrates an exemplary embodiment incorporating these features. In particular, Fig. 10 shows an interference amount measuring unit 1118 at a base station apparatus which sends an interference amount to an interference amount collecting unit 1413 in a control apparatus. The collecting unit 1413 then transmits the interference amount to an allowable interference amount calculating unit 312 at a cross-system control apparatus to determine an optimum channel at an optimum channel determining unit 318 (which in turn communicates with an assigned channel determining unit 1411 of the control apparatus).

The Office Action relies on Karabinis and Henson to describe the features of Claims 5 and 6.[1] However, the relied upon portions of these references merely describe aspects of reusing channels. These references are silent regarding measuring interference and determining channels based on the measured interference and an allowable interference amount.

As previously presented, Karabinis describes a system and method of operation for reusing and/or sharing a portion of frequency spectrum between a satellite spot beam and a second satellite spot beam, and/or an underlay terrestrial network associated with the second satellite spot beam.[2] Further, Karabinis describes that assignment of frequencies can be based on load and/or capacity issues in the spot beams, and the relied upon section of Karabinis merely describes a terrestrial system using a satellite channel not used by a spot beam.[3]

Karabinis is silent regarding what the load and/or capacity issues are and merely infers that signal to interference ratios can be used in determining an order in which frequencies are assigned, used, and/or shared.[4] Karabinis is also silent regarding measuring interference and determining channels based on the measured interference and an allowable

[1] Office Action, page 20-21.
[2] Karabinis, Abstract.
[3] Karabinis, paragraph 41.
[4] Karabinis, paragraph [0161].

interference amount. Accordingly, it is respectfully submitted Karabinis fails to disclose or reasonably suggest the claimed channel status information and the claims are allowable over Karabinis by virtue of this feature.

Henson is similarly deficient in this regard. The relied upon portion of Henson merely describes reusing frequency channels for a sector, specifically to improve a C/I ratio to improve speech quality based on an increase in demand for capacity in that sector.[5]

Henson is silent regarding measuring interference and determining channels based on the measured interference and an allowable interference amount. Accordingly, it is respectfully submitted Henson fails to disclose or reasonably suggest the claimed system characteristics information and the claims are allowable over Henson by virtue of this feature.

Therefore, it is respectfully submitted the outstanding rejections in view of Karabinis and Henson are overcome and should be withdrawn. None of the other cited references overcome the aforementioned deficiencies of Karabinis and Henson. Accordingly, it is respectfully submitted the claims are in condition for allowance.

Furthermore, as noted above, the claims are amended to recite a feature of (in the context of selecting or assigning) prioritizing a frequency channel of a low frequency band in the first radio communication system and prioritizing a frequency channel of a high frequency band in the second radio communication system. Support for this feature is found by way of a non-limiting example in the specification from page 28, line 27 to page 29, line 10 and Fig. 16(a). Specifically, when the first occupied use frequency band is lower than the second occupied use frequency band, priority for selecting a frequency channel in the first system is given to low frequency channels and priority for selecting a frequency channel in the second system is given to high frequency channels (note the fewer assignments given in the overlapping use frequency band).

[5] Henson, column 6.

It is respectfully submitted the art of record is silent regarding these features. Accordingly, it is respectfully submitted the claims are further patentable over the art of record by virtue of these features.

It is respectfully submitted no other issues remain pending in this application and this application is thus in condition for allowance. Should the Examiner disagree, the Examiner is encouraged to contact the undersigned to discuss any remaining issues. Otherwise, a timely Notice of Allowance is respectfully requested.

Respectfully submitted,

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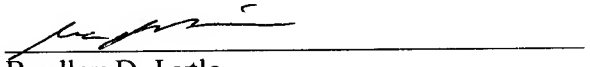

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